ILLINOIS AGRICULTURAL ECONOMICS STAFF PAPER

Series S, Rural Sociology

THE UTILITY OF DISAGGREGATING THE MIGRATION DEC
MAKING PROCESS: A SUBSTANTIVE EXAMPLE

by

James D. Williams and David Byron McMillen

December, 1978

Department of Agricultural Economics
University of Illinois at Urbana-Champaign
305 Mumford Hall, Urbana, IL 61801

Series S, Rural Sociology

THE UTILITY OF DISAGGREGATING THE MIGRATION DECISION MAKING PROCESS: A SUBSTANTIVE EXAMPLE

by

James D. Williams and David Byron McMillen

December, 1978 78-S7

Introduction

With the turnaround phenomenon has come an increasing interest in traditionally less important and, particularly, noneconomic motivations for migration. Certainly there is in nonmetropolitan America a great variety of stimuli for recent net inmigration patterns which reflect both economic and noneconomic "pull" factors. But, as Wilbur Zelinsky rather eloquently notes, "the economic-sum-metropolitan-sprawl explanatory strategy collapses when we confront those hundreds of remote, thinly settled, and emphatically bucolic counties for whose recent demographic resurgence there is no halfway plausible economic rationale" (1977:176).

The purpose of this paper is to demonstrate the usefulness of incorporating recent developments in migration decision making theory into the design of surveys eliciting, from respondents, the salient evaluative dimensions involved in the decision making process. While our suggestions are generally applicable to any survey including "reasons for moving" questions, we argue that there is a heightened need to improve upon the standard "why did you move?" approach when surveying migrants who are likely to have moved for nontraditional reasons. In particular, it is suggested that investigators operationalize the evaluative dimensions for migration behavior in terms of at least two decisions: (1) the decision to leave a place of origin, or outmigrate, and (2) the choice of destination, or basis for inmigration.

While we intend to demonstrate the utility of this approach with particular reference to nonmetropolitan "amenity area" inmigrants, we may note that our suggestions could prove important in the future even for surveys of all migrants. Indeed, if future flows increasingly come to

reflect rather nontraditional evaluative bases for migration behavior, then national random sample surveys would benefit from the greater specificity which we propose for operationalizing migration motivations.

Data

In the course of demonstrating the utility of operationally disaggregating the migration decision making process, we will employ an analysis of data from a recent midwestern study of inmigrants to rapidly growing nonmetropolitan counties. In the next few paragraphs, we describe relevant aspects of the study design.

As of November, 1975, there were 866 nonmetropolitan counties in the 12 state North Central Region. On the basis of estimates published yearly by the Bureau of the Census, we identified and selected all 75 nonmetropolitan counties which had greater than 10 percent (1970 base population) net migration between 1970 and 1975. This target group contained no counties in Iowa or Kansas, while Missouri and Michigan accounted for 24 and 21 counties, respectively. Forty-eight of the counties contained no urban place in 1970, and 25 of the counties were adjacent to an SMSA in 1975.

Within these high net inmigration counties a survey population of 316,[illegible]3 households with telephones was estimated from 1975 census estimates of households and 1970 estimates of telephone coverage for the target counties. For each county, all telephone exchange areas were identified and the most recent directories (1976 or 1977) were obtained. From these directories a systematic sample of 11,329 households was drawn using a sampling interval of 1/28 excluding, as much as possible, double and business listings.

The sources of bias are those normally associated with telephone surveys: households without telephones or with unlisted numbers. The average telephone coverage of households for the target counties was 82.5 percent in 1970. Only six counties, which accounted for less than 4 percent of the survey population had phone coverage of less than 70 percent. Estimates by the Bureau of the Census indicate that national phone coverage has increased since 1970 and thus the 1970 phone coverage data may overestimate the potential for bias. Available data indicate that unlisted numbers are only a problem in large metropolitan areas and thus present virtually no source of bias in this study. A further potential source of bias unique to this study is the tendency for recent inmigrants to be excluded from telephone listings. Only five inmigrant households were located which had moved in in 1977, though the distribution of migrants by year of inmigration is fairly regular for 1970-1976.

In order to maximize the probability of obtaining an inmigrant on any given call, the sample names, address/,es and phone numbers were matched with the appropriate 1970 telephone directory. This matching, performed at the Library of Congress, yielded two strata: (1) expected resident (matched) households, and (2) expected inmigrant (unmatched) households. Problems arising with common surnames, intra-county migrants, and redistricting of telephone exchange areas were handled by treating all ambiguous cases as unmatched and placing them in the expected migrant stratum.

Within the survey population of households, three respondent types were identified, and quotas established, for subsequent disproportionately stratified sampling: (1) continuous residents of the counties since April, 1970; (2) inmigrants since April 1970 who had moved from an SMSA county; and

(3) inmigrants since April 1970 who had moved from a non-SMSA county. Resident status and migrant type were determined from a series of initial screening questions. The various selection rules and probabilities of selection yielded interviews with 500 metropolitan migrants and 208 interviews with nonmetropolitan migrants. The resident sample is not used in this analysis.

Heads of households were the primary respondents, though spouses were interviewed after several unsuccessful attempts at contacting the head. We are thus studying household rather than individual migration. Only persons reporting the current location as their usual place of residence were interviewed and thus seasonal residents were excluded. The very few households which came through the expected resident stratum and which turned out to be inmigrants (out and back in during the interval 1970-1977) are excluded from this analysis.

The refusal rate on the screening section was 3.7 percent, and on the main interview it was 9 percent for the metro migrants and 3 percent for the nonmetro among contacted households. Interviewing was conducted in the spring and early summer of 1977. Interviews lasted from 30 to 50 minutes and interviewers reported that respondents generally were very cooperative. Indeed, the low refusal rate and interviewer perceptions suggest considerable ease in interviewing in these predominantly rural areas.

In the subsequent analysis, the two migrant substrata (metropolitan and nonmetropolitan origin) have been combined. As the numbers of completed interviews are the result of complex sampling and not simple random sampling, the two migrant substrata have been weighted to reflect estimated proportional

representation in the population. Weighting of the two migrant groups has been performed in such a way as to maintain the the number of total interviews. The metro-nonmetro odds are altered from the interviewed ratio of about 5:2 to an estimated 4:3. This rather minor adjustment does not, in our opinion, require extensive alterations in the formulae for significance testing in the subsequent analysis. Our statistical analysis will treat the data as if it were the result of simple random sampling. Use of weighted data causes slight discrepancies in Table frequencies.

Rationale

In migration research, motivation has been investigated indirectly by inferring motives from individual and household characteristics and from contextual factors, and directly investigated by enumerating evaluative dimensions, or reasons given by respondents who have migrated. Both approaches involve problems. Of particular concern to this research we should note that stated reasons may involve rationalization, or people may respond in socially acceptable ways, not know why they moved, or give such vague answers as to be useless (Lansing and Mueller, 1967). In spite of these problems, though, Rossi concluded that reason analysis is "particularly applicable for human actions which involve a conscious choice among alternatives . . ." (1955:124).

Implicit in any reason analysis is the assumption that the relative importance of each of the members of a set of reasons obtained from a sample of respondents reflects the relative importance of that factor as a cause of migration. The classification of reasons into some coding scheme represents the researcher's efforts to obtain a simplified schema which will maximize within-category homogeneity and across-category heterogeneity. In a final tabulation, one might see "economic" reasons contrasted with

"social" reasons and depending on the proportions in each category, the data may be used to suggest which set of reasons captures the greatest share of the "explanation of migration."

To date there has been little systematic concern with the wording of questions designed to elicit the evaluative dimensions for migration decision making. However, it is clear that some scholars, and geographers in particular, view migration decision making as involving more than one decision. If more than one decision is involved, then there is more than one behavior to be explained and the causes of each need not be the same. Thus, the reason structures obtained from a sample of respondents for different migration-related decisions may themselves differ, and reflect the differing bases of causation for the different behaviors involved.

For intraurban mobility in particular, Brown and Moore (1970) have suggested that migration involves, for a significant number of migrants, at least two decisions: (1) The decision to leave an area of origin, and (2) the decision of where to move (see also Roseman, 1977). The causal bases of the first help explain outmigration while the causal bases of the second decision help explain inmigration when evaluated at point of origin and point of destination, respectively.

Wolpert (1965), in conceptualizing migration decision making, implies that these two decisions are not necessarily separate but rather suggests that the individual tends to simultaneously evaluate the present residence in the context of alternative residences. His concept of place utility encompasses both an evaluation of the current residence and an evaluation of alternative residences. Place utility tends to be operationalized through satisfaction measures. Similar approaches are evidenced in the work of Rossi

(1955) and Speare, et al. (1974) as well as Brown and Moore (1970).

Migration is but one of numerous possible responses to the disequilibrium which results from dissatisfaction at a place of residence. The individual might alternatively restructure the environment or alter desires and expectations. The stresses which cause a consideration of migration among alternative behaviors, are, in turn, a function of variables familiar to migration researchers, such as changes associated with life or career cycle development.

The extent to which migration is viewed as a viable option in response to stress is importantly related to the individual's capability to evaluate alternative residences, and thus to the formation of place utilities. Without an alternative location as a reference point of comparison, we may surmise that the individual is not likely to leave the current location. Thus, the factors which impinge upon the destination selection and evaluation process may also affect the initial decision to leave an area of origin.

Development of the concept of place utility, however, has been greatest with reference to the process of destination selection. Wolpert, assuming "intendedly rational" behavior wherein individuals engage in an evaluation process which can be flawed, writes that "...the utility with respect to ... alternative sites consists largely of anticipated utility and optimism which lacks reinforcement of past rewards. This is precisely why the stream of information is so important in long distance migration--information about prospects must somehow compensate for the absence of personal experience" (1965:162).

The concept of search space describes a subset of places within an awareness space (Brown and Longbrake, 1970). Awareness space contains the places about which a potential migrant has some information, no matter how limited. The search space contains only those seriously evaluated, or those for which place utilities are formed. Thus we see that information sources may determine the number of places in the ultimate search space by determining the places in the initial awareness space.

DaVanzo and Morrison have recently introduced the phrase "location specific capital" as a "generic term denoting any or all of the diverse factors that 'tie' a person to a particular place"(1978:8). They find, in their analysis, empirical support for the hypothesis that "when a person who has migrated moves again, he or she should favor some former place of residence as the destination because the person has location specific capital there" (1978:8). Thus, location specific capital is suggested to determine the direction of migration. When viewed also as a general influence on the extensiveness of the awareness space, which in turn affects the decision to leave, then location specific capital may also be a determinant of the degree of migration.

In their work, DaVanzo and Morrison were attempting to explain return migration. Two other central hypotheses of their research are: (1) That location specific capital depreciates over time, and; (2) that if a person miscalculates net place utilities, moves, and finds the move to be an unwise investment, the migrant then has superior information about the place recently left and will tend to return rather quickly. They are, thus, discussing hypotheses about factors which influence awareness and search space as well as place utility formation.

The last several paragraphs provide a brief and much simplified overview of concepts and approaches to be used in subsequent analysis. At this point let us turn to direct evidence suggesting the utility of enumerating the evaluative dimensions, or reasons for both out- and inmigration behaviors.

Demonstration

In the current study, respondents were asked questions designed to elicit reasons for leaving the place of origin and criteria for destination selection. For the former, respondents were simply asked why they decided to leave (origin city name inserted). We elicited up to three reasons and these were recorded verbatim. About 26 percent of respondents gave more than one reason and for these a subsequent question asked which reason the respondent felt was the most important one. The following data refer to one "main" reason for leaving. Reasons related to destination selection are based upon a question asking the respondent why s/he picked "this" place instead of some other. Again, we report data for only one cited reason.

The open-ended responses to the reason questions were later coded into an initial 62 category scheme allowing for considerable specificity of responses. In order to assure reliable results, the coding of all reasons questions was performed independently three times. Where inter-coder discrepancies occurred, differences were arbitrated and necessary changes made.

The most obvious approach to demonstrating the importance of each question is to simply examine the marginal distributions in order to observe differences in evaluative dimensions reported by respondents. The distributions of responses to both questions are presented in Table 1.

Optimally, one should apply exactly the same classification scheme to both sets of reasons in order to make appropriate comparisons. However, precisely because we are dealing with different behaviors, we must note that it was not completely possible to apply identical classification schemes. For about 15 percent of the sample, retirement was given as the reason for leaving the place of origin. In contrast, retirement is not an appropriate response to a question asking why a respondent chose the particular destination. In three cases, however, retirement was mentioned as the reason for choosing the destination. These cases have been recoded to the "other-other" response category eliminating retirement as a possible basis for destination selection.

It is quite apparent from the distributions that the evaluative dimensions for the two decisions differ. In particular, we may note that nearly half (47.6 percent) of all respondents chose their destination on the basis of location specific capital in a variety of forms while only about 18 percent decided to leave for tie-related reasons. Clearly the causal bases of in- and outmigration would appear to differ.

From a somewhat more formal perspective, the marginals in Table 1 express the net results of some relationship between the evaluative dimensions for the two decisions. The greater the relationship between evaluative criteria for the two decisions, the less is the need for separate operationalizations. Two importantly different types of migrants may result in a high positive relationship between reasons for leaving and for destination selection. The first and most obvious of these is the migrant who reports very similar bases for leaving and for destination selection. In our categorization scheme, this would be, for instance, a person who reports an employment-relate reason for both behaviors. In a statistical sense, we need not have asked both questions for persons responding to both questions in similar ways.

The second source of a relationship between criteria for the two behaviors is attributable to the nature of the migration decision making process. For some migrants, the basis for initially deciding to leave an origin minimizes the process of search space formulation so that no destination selection process can be separated from the decision to leave the area of origin. The prime example is the person who reports having left in order to move "back home." We would expect (and find) that this migrant's basis for selecting a destination is that the place is "home." Thus, for some migrants, the response to the question on leaving simultaneously, and rightfully, determines the response to the question on destination selection resulting in a boost in the relationship between the two evaluative dimension sets of responses. For these migrants, all important information related to the entire decision-making process being investigated here is contained in the response to why the person left their origin and we need not have asked about destination selection.

We may further illustrate this point by examining a bivariate table relating gross categories of reason for leaving to reason for picking the destination as presented in Table 2 (see Technical Appendix for discussion of significance testing.) Results of significance testing for this and subsequent tables are summarized in Table 4. For Table 2, for instance, we fit a classic independence model based on the expected frequencies generated using the observed marginals. This is symbolized as (1) (2) in Table 4. Since the chi-square is large and significant, we know that there is a strong relationship between reasons for leaving and basis for selecting a destination in Table 2.

From Table 2, we may observe that much of the relationship between the two sets of reasons derives from the influence of the category combinations of "employment-employment" and "ties-ties." Embedded in these cells, however, are both sources of relationship just identified. The reasons given by these respondents for leaving their origins provide a clue as to whether they appear in identical reason categories because of identical evaluative dimensions in a two-step decision-making process, or whether they simultaneously chose a destination given a certain reason for leaving.

Consider, first, those who report employment-related reasons as both the basis for leaving and choosing a destination. These migrants are moving for relatively traditional reasons. Based upon a reason for moving question, transfers and searches for new or better employment accounted for nearly half of all interstate moves among respondents in the U.S. Annual Housing Surveys, 1974-1976 (Long and Hansen, 1978). Within the employment-employment cell, however, are both sources of the equivalence of responses. The person who is transferred, for instance, is quite different in terms of decision-making process than the person who reports leaving to look for better employment. Specifically, the transferee, and for that matter the person who left because of finding a new or better job, has not engaged in any destination selection process separable from the decision to leave as operationalized here. Regardless of what process of search space formulation may precede temporally the decision to leave, for our purposes we would expect a tendency for equivalence in responses among transferees and those who left because they found another job. In contrast, the person who left in order to find a better job engages in a conceptually, given our

classification scheme, distinct process of destination selection.

Those migrants suggesting that they initially decided to leave their origins because of location specific capital at an already chosen destination are conceptually similar to transferees and those who report having found a better job as the reason for leaving. The destination choice is inseparable linked to the reason for leaving and it makes little sense to ask separately about destination selection. As a result, we find about 84 percent of those leaving for tie reasons also choosing their destination for tie reasons, as seen in Table 2.

For the rest of this paper we will want to focus on the process of destination selection and so should restrict our analysis to only those for whom a separation of the decisions to leave and choose a destination seems reasonable. For convenience, we must ignore some variability and specify ideal types. We have deleted from further analysis all persons who reported reasons for leaving for which destination selection has no separate meaning. The categories involved are indicated by asterisks in Table 1 and include persons leaving because of a transfer, or because new employment was located, or because of a desire to maximize some form of location specific capital. In all, we have deleted 247 households or about 35 percent of the sample. For these people especially there is no empirical reason to ask a separate question eliciting the evaluative basis for destination selection.

The removal of these "simultaneous" decision-makers reduces appreciably the level of the relationship between reasons for the two behaviors, though the disjunctures in categorizations tend to make statistical interpretation problematic. The data are presented in Table 3 and the relationship remains significant as shown in Table 4. We now have left in the table two types of

migrants of further relevance to this paper; we have those who have the same bases for both decisions and we have those with different bases. For 143 cases in Table 3, or about 32 percent of these nonsimultaneous decision makers we technically need not have asked both questions (cells employment-employment and environment-environment/ and other-other). For the rest, the evaluative dimensions, our key to causal bases of the two behaviors, are different with respect to out-and immigration. Thus, for about 45 percent of all interviewed migrants, there is clear empirical justification for asking both questions.

Substantively, the patterns in Table 3 are quite revealing. Those initially motivated to leave for job reasons tend to choose a destination on the basis of job-related criteria (57 percent). Thus, there is a tendency for more traditionally motivated migrants to make both decisions on the basis of similar evaluative criteria and thus less statistical need for enumerating the reasons for both behaviors. But, there remains, among those whose leaving was employment motivated, an additional 43 percent who selected their destination on the basis of a different criterion, especially ties or location specific capital (32 percent). From data not displayed, we find that their ties are generally in the form of a job or business in the area.

In contrast to employment motivated migrants, retirees, especially important to recent patterns of nonmetropolitan immigration, tend to have selected their destinations on the basis of location specific capital in a variety of forms, including family and friends and prior residence as well as property and vaction experience. Those motivated to leave because of environmental reasons most often suggest destination selection on the basis of environmental reasons (43 percent) but also draw heavily upon location

specific capital (41 percent).

If is quite clear that with the possible exception of those who left for job related reasons, destination selection is importantly a function of location specific capital, among migrants by whom we can reasonably suggest at least two decisions were made. Furthermore for the two most important types of immigrants in terms of reasons for leaving, those who responded with environmental reasons or who cited retirement, we would have underestimated the role of location specific capital in the decision making process had we not also asked the basis for destination selection.

As demonstrated in the detailed categorization scheme of Table 1, location specific capital has been utilized by these migrants in a variety of forms. Some have chosen their destination in order to be closer to family or friends, others simply stated that they had experience with the area through previous residence, and many seem to have had or received property in the area. As suggested by these responses, a migrant need not have ever migrated before, or lived in the area before, in order to have acquired location specific capital in the destination area. For instance, friends or family may have migrated to the area at some earlier time and served as the link to a potential migrant. Vacation contact also need not entail prior migrant status or prior long-term residence. The importance of vacation contact, especially among retirees, in shaping the process of search space formation has been documented by Sly (1974) in a study of Florida immigrants. We found that nearly three-quarters of the respondents had visited Florida prior to moving there, and most of the visits were in the form of vacations.

These comments simply reinforce our contention that DaVanzo and Morrison's concept of location specific capital is relevant to the decision

making process of a great variety of types of migrants; those moving for the first time, those who have moved before and do not return to a prior residence in a subsequent move, as well as return migrants.

Tie-related responses to the reason questions suggest that the respondent has drawn upon some form of location specific capital in the migration decision making process. While we are concentrating upon destination selection, we may note that those who gave tie responses as their reason for leaving, have, in a sense, "cashed in" on location specific capital closer to the presumed outset of the decision making process. The 126 households suggesting ties as a reason for leaving (Table 1) plus the 213 households suggesting ties only as the basis for destination selection (Table 3) account for about 48 percent of all inmigrant households. Though the subsequent analysis could be performed with respect to reasons for leaving, let us concentrate on the role of location specific capital in the process of destination selection.

Let us first define the utilization of location specific capital as the proportion suggesting ties as the basis for destination selection. We would anticipate that the utilization of location specific capital presumes the existence of location specific capital in some form. But, location specific capital need not be cashed in in the sense of being the reason for selecting the destination area. There may be numerous migrants with friends and relatives in the area, or with prior residence, who selected their destination on the basis of employment or other non-tie-related reasons. If we can objectively measure the existence of location specific capital, then we can investigate the relationship between having and drawing upon location specific capital.

In line with DaVanzo and Morrison's work, we have chosen to investigate

only one form of location specific capital - prior residence. Among several questionnaire items related to contacts prior to moving, respondents were asked if they had ever lived in "this" area prior to inmigrating. We may thus form a "dummy" variable where those who are return migrating are defined to have one unit of location specific capital in the form of prior residence. They account for about 30 percent of nonsimultaneous decision households. We may now investigate the relationship between two "dummy" variables, having location specific capital in the form of prior residence, and using it by responding a tie related reason for choosing the destination.

The relationship is best defined by a slope line, which in this special case is simply the difference in the percentages reporting tie reasons between those with and without prior residential experience in the area. This relationship is graphed in Figure 1. The significance test as summarized in Table 4 shows that there is a significant relationship between the two variable

The slope of the line in Figure 1 may be interpreted in a variety of meaningful ways. Among other interpretations, it is a rate of return on one unit of location specific in the form of prior residence and where returns involve any type of tie-related reason for picking the destination. We could also think of it as a "cash-in" rate for prior residence, or, alternatively, as the salience of prior residence to destination selection on the basis of location specific capital.

We may note from Figure 1, that the rate of return is positive and substantial as expected. We may further note that even among those without prior residence, the level of utilization of location specific capital is substantial (about 40 percent).

Since we are focusing on destination selection, we are currently using only one of the two reason questions. Figure 1 requires only a question about why the respondent chose the destination, and a question asking about prior residence. Technically, we have yet to demonstrate the utility of both reason questions for this particular substantive problem of returns to location specific capital. Statistically, we need to demonstrate an interaction effect between reason for leaving, choosing a destination on the basis of ties, and the existence of location specific capital in the form of prior residence.

Substantively, the interaction effect provides knowledge about differing rates of return to prior residence capital for migrants initially motivated to leave their origins for different reasons. For instance, we may determine whether prior residence is more salient for those who are retiring, or for those who left because of employment reasons. The person motivated to leave for job related reasons, however, we have suggested tends to chose a destination on the basis of job related criteria. This seems reasonable. The job related outmigrant then should tend to cash in on location specific capital in destination areas to a lesser degree. The various slope lines are presented in Figure

We may note, first, that the line for those who left for employment reasons is the lowest suggesting that overall, they tend the least to select destinations on the basis of location specific capital. This simply restates the findings in Table 3. However, it would appear that the highest rates of return on location specific capital in the form of prior residence are among retirees and those initially motivated to leave because of environmental reasons. Those leaving for employment and other reasons have very low rates of cashing in on prior residence.

The significane test presented in Table 4, however, is a bit problematic.

The expected frequencies to be tested against observed frequencies have been generated on the basis of all possible bivariate relationships in the cross-classification and/is symbolized by (12) (13) (23). The probability level of .069 suggests that we can, though only barely, fit the observed frequencies without taking into account the interaction of all three variables. That is, the expected frequencies on the basis of all two-way relationships are not different from the three-way observed frequencies at the five-percent level, but are different at the 10 percent level. The slopes in Figure 2 then, are not significantly different from each other at the lower probability level, but are at the 10 percent level.

In part, the lack of differences between the rates of return may be a function of imprecision in our linking all tie reasons for picking the destination to only one form of location specific capital - prior residence. Prior residence almost certainly entails the acquisition of location specific capital in diverse forms. The return migrant may respond to family or friends left behind in an earlier move, may have housing to return to, a business left behind, or simply want to "go back home." As a first step in furthering our understanding of the role of location specific capital in the migration behavior of these migrants, let us investigate the nature of some of these diverse forms of location specific capital reasons for picking the desination.

We have broken down the gross category of tie reasons for destination selection into four subcomponent sets of responses. We have, from Table 1, combined those responding a desire to be closer to a business or job and those suggesting property ties into a category we now call "economic ties." We have also combined vacation contact responses with other ties into a category,

"vacation and other" ties. Those expressing a desire to be closer to family or friends, and those wanting to "go back home" are maintained as separate response categories. We may now analyze the salience of prior residence to destination selection by examining the different rates of return for the four types of tie responses. Figure 3 presents these results.

Only two bases for destination selection reveal positive rates of return to location specific capital in the form of prior residence: a desire to go back home, and the family and friends factor. As would be expected, returns to prior residence are most manifest in the form of responses suggesting a desire to return home. It would appear that among these migrants, the more global expression of wanting to go back home is more closely linked to return migration than is the desire to be with family and friends left behind in a prior move. Of course, part of the desire to return home may be a function of family and friends left behind and so we probably are not investigating mutually exclusive factors. Results of significance testing (table 4) confirm the significance of differences in the slope lines.

It is clear from these data that we should pursue the linkage between having lived in the area before, and choosing that area because of a desire to return to a former residence. Once again we shall ask, in this purifeid specification, if those initially motivated to leave their origins for different reasons cash in on prior residence at differing rates. Relevant slope lines are presented in Figure 4.

It should be noted first that some migrants without prior residence, but who suggest a desire to return home continue to exist as evidenced by the non-zero left intercepts for all lines. The explanation for this may lie in

differential subjective perceptions and evaluations on what constitutes the respondent's relevant geographic referrent area. It would appear that some have responded that they have not lived in "this" area before for purposes of answering that question, but do see themselves as moving "back home". Unless these responses are random error, which they could be given the small number of cases involved, we might infer that the territorial scope of "back home" is larger than the scope of area included in a respondents view of a current residential environment.

In any event, the results in terms of differential slopes are quite revealing. As evidenced in Table 4, we do need the interaction effects in order to reproduce the three-way table underlying Figure 4. That is, the interaction effect is significant at the .025 level. It is retirees who have tended most to cash in on prior residence in selecting their destinations. To a lesser extent, though, the other types of outmigrants have also importantly drawn upon prior residential experience. Even those initially motivated as a function of employment factors have drawn upon location specific capital in the form of prior residence.

Since the interaction term is significant and the slopes are different, we conclude that knowing the reason for leaving (in conjunction with the basis for immigration and the prior residence variable) provides truly additional information about the relationship between having, and using at least one form of location specific capital. Thus, asking respondents about their reasons for leaving and basis for selecting a destination is fully justified in the context of the substantive example presented here.

Summary and Discussion

Since location specific capital is a generic term, the previous analysis could readily be expanded to incorporate other forms of ties which respondents may or may not suggest as important to destination selection. For instance, one could generate rates of return for family, friends, prior vacation experience, or property ownership given a questionnaire including items asking about the existence of such contacts prior to inmigration. Rates of return on each of these forms of location specific capital could be compared and interpreted as to the relative salience of each in destination selection. We have also ignored an analysis of rates of return on location specific capital in the decision to leave. Our findings, however, clearly suggest that had we asked only the respondent's reason for leaving the place of origin, we would have seriously underestimated the importance of location specific capital in the total migration decision making process.

The suggestion that survey researchers include two operationalizations of evaluative criteria, or reasons, is a conservative approach since it implies a discrete, two-stage decision making process. For some migrants, however, we might find a much more continuous decision making process involving a narrowing down of the awareness space into a viable search space and ultimately to a single destination. Survey researchers, of course, must make operationalizations on the basis of a discrete process but still we might benefit greatly from more than two questions. For instance, we have no idea how our sample members would have responded to a question designed to elicit reasons for moving to a nonmetropolitan area, in general. To ask this question presumes that a decision point was encountered at which a respondent chose to eliminate all metropolitan places from the awareness space.

The importance of disaggregating the migration decision making process into more than a simple move or not framework implies that the migrant has been able to make choices affecting his or her behavior. That is, separate operationalizations are particularly applicable to the voluntary, relatively unconstrained migrant. This point has important implications.

On the basis of the reasons given for leaving their origins, we must suspect that many of these inmigrants to nonmetropolitan high growth areas of the Midwest are voluntary migrants, and perhaps relatively unconstrained. The modal response category was an environmental reason for leaving the origin. Further analysis, however, demonstrated that those who left for environmental reasons, as well as because of retirement, drew heavily upon location specific capital in the form of prior residence when selecting their particular destinations. If those leaving their origins for environmental reasons, or retirement reasons are a major factor in nonmetropolitan growth nationally, then clearly it is important to ask these migrants about destination selection criteria. In contrast, we demonstrated that the employment-related motivated outmigrant tends similarly to choose a destination on the basis of employment criteria and so, perhaps it is less important to ask such migrants about destination selection. We conclude that current nonmetropolitan growth, especially, is importantly a function of migrants for whom we gain much insight if we disaggregate our operationalization of the migration decision making criteria. This probably reflects the voluntary and relatively unconstrained nature of their behavior.

If indeed voluntary migrants in the future increasingly come to suggest nonemployment bases for migration decision making, then we should also expect to need disaggregated operationalizations in the future. As yet, we simply don't know the nature of this possible trend. Long and Hansen (1978) have attempted a time series investigation of reasons for migrating, but conclude that it is simply not possible to investigate the matter fruitfully given available data.

In summary, we feel that it is essential that future surveys of migrants, especially those which are certain to focus on nonmetropolitan "amenity" growth areas, include separate reason questions for in and out-migration decisions. This is a minimum for an accurate understanding of the total decision making process. To other researchers, we submit that the prudent approach for any survey of migrants attempting to elicit "reasons for moving" is to ask criteria for both leaving and choosing a destination.

Technical Appendix

The methodology used in this paper is log-linear analysis of cross-classified data. Drawing on the works of Goodman (1978) and his computer program ECTA, we present likelihood ratio chi-squares as tests of significance. The advantage of this methodology is that it allows us to test for interaction effects in three-way contingency tables.

The logic of log-linear analysis is similar to traditional chi-square tests. We begin with a table of observed cell frequencies and from the marginals of that table we calculate expected cell frequencies. We then test the departure of the expected frequencies from the observed frequencies. In the traditional χ^2 analysis, this would be a test for statistical

independence between two variables. The larger the value of the χ^2, the more readily we can reject the null hypothesis of statistical independence which is to say that the expected cell frequencies generated on the basis of the marginals do not fit the observed frequencies.

Similarly, log-linear analysis generates expected cell frequencies under a variety of assumptions, and provides a test for the fit between expected and observed cell frequencies. A small value of the χ^2 indicates a fairly good fit (subject to degrees of freedom of course) while a large χ^2 indicates a poor fit under the assumptions of the model tested.

The basic model for log-linear analysis of a two variable cross-classification is given by the identity

$$f_{ij} = \eta\tau_i^1 \tau_j^2 \tau_{ij}^{12} \qquad (1)$$

where f_{ij} refers to the observed frequencies of variables 1 and 2; η is the geometric mean of f_{ij}; and the τ parameters are the probabilities that an observation appears in the subscripted cell of the superscripted univariate or joint distribution. The model for testing statistical independence in the bivariate case is given by the formula

$$F_{ij} = \eta\ \tau_i^1\ \tau_j^2\ , \text{ where } \tau_{ij}^{12} = 1. \qquad (2)$$

In this equation F_{ij} is the expected frequency in the ij^{th} cell; η and the τ parameters are as defined above. The formula for the likelihood ratio chi-square is

$$\chi^2 = 2\Sigma\ f_{ij}\ \ln\ (f_{ij}/F_{ij}) \qquad (3)$$

where f_{ij} is the observed frequency in the ij^{th} cell and F_{ij} is the expected frequency in the ij^{th} cell. This is equivalent to the G^2 statistic reported by Cohen (1975).

Extending this analysis to three variables, we have the identity

$$f_{ijk} = \eta\, \tau^1_i\, \tau^2_j\, \tau^3_k\, \tau^{12}_{ij}\, \tau^{13}_{ik}\, \tau^{23}_{jk}\, \tau^{123}_{ijk}. \qquad (4)$$

And, we might postulate the following model

$$F_{ijk} = \eta\, \tau^1_i\, \tau^2_j\, \tau^3_k\, \tau^{12}_{ij}\, \tau^{13}_{ik}\, \tau^{23}_{jk}, \text{ where } \tau^{123}_{ijk} = 1. \qquad (5)$$

This model hypothesizes that there is independence between two variables across the third, or that there is no three-way interaction between the variables, or that the relationship between two variables is constant across the levels of the third. A large and significant value of χ^2 would lead us to reject this hypothesis and conclude that we cannot fit the observed cell frequencies with a model devoid of the three-way interaction effect. A small, insignificant χ^2 would suggest no interaction in that we would have fit the table of observed frequencies rather well. Remember, the statistical test is of how well the expected frequencies based upon some assumption(s) fit the observed frequencies.

Using ECTA we obtain maximum likelihood estimates of the cell frequencies and a likelihood ratio chi-square test of the departure of the expected cell frequencies from the observed cell frequencies. Table 4 summarizes the results for relevant tables and figures. Though not presented, it will be remembered that a cross-classification underlies the figures and provides the cell frequencies for the log-linear analysis.

For the bivariate case, we have tested for statistical independence between two variables. This test is symbolized as (1) (2) in Table 4 and corresponds to equation 2 above. The low significance levels in the results for Tables 2 and 3 and Figures 1 and 3 suggest that the expected frequencies on the basis of an assumption of independence do not fit the observed frequencies and so the relationships are significant.

The three-variable tests correspond to equation 5 above and are symbolized in Table 4 as (12) (13) (23). The three-way interaction term is all that is left out and so we are attempting to fit observed frequencies on the basis of expected frequencies generated without allowing for the three-way interaction. The significance levels for Figures 2 and 4 simultaneously suggest how well we fit the table and the significance of the interaction term. A significant interaction suggests that the slope lines for any two variables differ across levels of a third variable. In Figure 2, the interaction term is significant at the .069 level while in Figure 4 it is significant at the .025 level and so we may have greater confidence in the existence of differing slopes in Figure 4.

References

Brown, Lawrence A. and David B. Longbrake
1970 Migration Flows in Intraurban Space: Place Utility Considerations. Annals of the Association of American Geographers 60(2):368-384.

_____ and Eric G. Moore
1970 The Intra-urban Migration Process: A Perspective. General Systems XV: 109-122.

Cohen, Joel E
1975 Childhood Mortality, Family Size, and Birth Order in Pre-Industrial Europe. Demography 12(1): 35-56.

DaVanzo, Julie and Peter A. Morrison
1978 Dynamics of Return Migration: Descriptive Findings From a Longitudinal Study. Rand Paper P-5913, Palo Alto, CA.

Goodman, Leo
1978 Analyzing Qualitative/Categorical Data: Log-Linear Models and Latent Structure Analysis. Abt Books. Cambridge, MA.

Lansing, John B and Eva Mueller
1967 The Geographic Mobility of Labor. Ann Arbor: University of Michigan, Institute for Social Research, Survey Research Center.

Long, Larry H. and Kristen A. Hansen
1978 Reasons for Interstate Migration: Jobs, Retirement, Climate and Other Influences. Paper presented at the annual meeting of the Southern Regional Demographic Group, San Antonio, Texas, October.

Roseman, Curtis C.
1977 Changing Migration Patterns Within the United States. Resource Papers for College Geography No. 77-2. Association of American Geographers.

Rossi, Peter H.
1955 Why Families Move: A Study in the social Psychology of Urban Residential Mobility. Glencoe, IL: Free Press.

Sly, David F.
1974 Tourism's Role in Migration to Florida: Basic Tourist-Migration Relationship. Governmental Research Bulletin, The Florida State University, Institute for Social Research, Vol. 11.

Speare, Alden, Jr., Sidney Goldstein, and William H. Frey.
1974 Residential Mobility, Migration, and Metropolitan Change. Ballinger, Cambridge, MA.

Wolpert, Julian
1965 Behavioral Aspects of the Decision to Migrants. Papers and Proceedings, Regional Science Association, 15:159-177.

Zelinsky, Wilbur
1977 Coping with the Migration Turnaround: The Theoretical Challenge. International Regional Science Review, 2(2): 175-178.

TABLE 1

DETAILED MOTIVATIONS

	Reason for Leaving			Destination Selection Criteria		
	N	% of Total	% of Catg.	N	% of Total	% of Catg.
All Reasons	710	100.0	---	710	100.0	---
1. Employment: job change; reassignment	182	25.6	100.0	148	20.8	100.0
Transfer	58*	8.2	31.9	42	5.9	28.4
Look for new or better job	22	3.1	12.1	14	2.0	9.5
Found new or better job	63*	8.9	34.6	64	9.0	43.2
Unemployment	12	1.7	6.6	0	---	---
Other (incl. military)	27	3.7	14.8	28	9.9	18.9
2. Ties: location specific capital	126	17.7	100.0	338	47.6	100.0
Moved closer to business or job	33*	4.6	26.1	40	5.6	11.8
Owned or received property	28*	3.9	22.2	70	9.9	20.7
Moved closer to family or friends	31*	4.4	24.6	97	13.7	28.7
Moved back home; Lived in area before	23*	3.2	18.3	81	11.4	24.0
Vacationed in or visited area before	1*	0.1	0.8	43	6.1	12.7
Other ties	10*	1.4	8.0	7	1.0	2.1
3. Environmental	216	30.4	100.0	176	24.8	100.0
General anti-urban or pro-rural	93	13.1	43.1	45	6.3	25.7
Congestion; Wanted a smaller town	31	4.4	14.4	6	0.8	3.4
Polution; Environment	4	0.6	1.9	12	1.7	6.8
Climate	6	0.8	2.7	6	0.8	3.4
Crime	13	1.8	6.0	6	0.8	3.4
Schools	16	2.3	7.4	12	1.7	6.8
Recreational opportunities	5	0.7	2.2	24	3.4	13.6
Cost of living; Taxes	12	1.7	5.6	15	2.1	8.5
Liked or disliked area in general	22	3.1	10.2	19	2.7	10.8
Other environmental factors	14	2.0	6.5	31	4.4	17.6
4. Retirement	99	13.9	100.0	---	---	---
5. Other	83	11.7	100.0	47	6.6	100.0
Family; Life cycle	32	4.5	38.6	11	1.5	23.4
Housing	10	1.4	12.0	19	2.7	40.5
Health	20	2.8	24.1	5	0.7	10.6
Other	21	3.0	25.3	12	1.7	25.5

* see text for explanation

Table 2. Relationship between Criteria for Destination Selection and Reason for Leaving Origin (all households)

Destination selection criteria	Reason for leaving				
	Employ-ment	Ties (location specific capital)	Environ-ment	Retire	Other
Employment	125 (68%)	3 (2%)	17 (8%)	1 (1%)	3 (4%)
Ties (location specific capital)	36 (20%)	107 (84%)	87 (40%)	62 (62)	44 (54)
Environment	18 (10%)	16 (13%)	93 (43%)	30 (30%)	19 (23%)
Other	4 (2%)	1 (1%)	19 (9%)	7 (7%)	15 (19%)

Table 3. Relationship between Criteria for Destination Selection and Reason for Leaving Origin (Households in which decisions were not simultaneous)

Destination selection criteria	Reason for leaving			
	Employment	Environment	Retire	Other
Employment	35 (57%)	14 (7%)	1 (1%)	2 (3%)
Ties (location specific capital)	20 (32%)	87 (41%)	62 (62%)	44 (55%)
Environment	7 (11%)	93 (43%)	30 (30%)	19 (23%)
Other	0 (0)	19 (9%)	7 (7%)	15 (19%)

Table 4. Likelihood Ratio χ^2 Values for Relevant Tables and Figures

	Model Fit	χ^2	df	Sig.
Table 2	(1) (2)	385.49	12	.000
Table 3	(1) (2)	129.48	9	.000
Figure 1	(1) (2)	26.24	1	.000
Figure 2	(12)(13)(23)	7.07	3	.069
Figure 3	(1) (2)	125.44	4	.000
Figure 4	(12)(13)(23)	9.32	3	.025

FIGURE 1

RETURNS TO LOCATION SPECIFIC CAPITAL (PRIOR RESIDENCE)
FOR NON-SIMULTANEOUS DECISION MAKERS

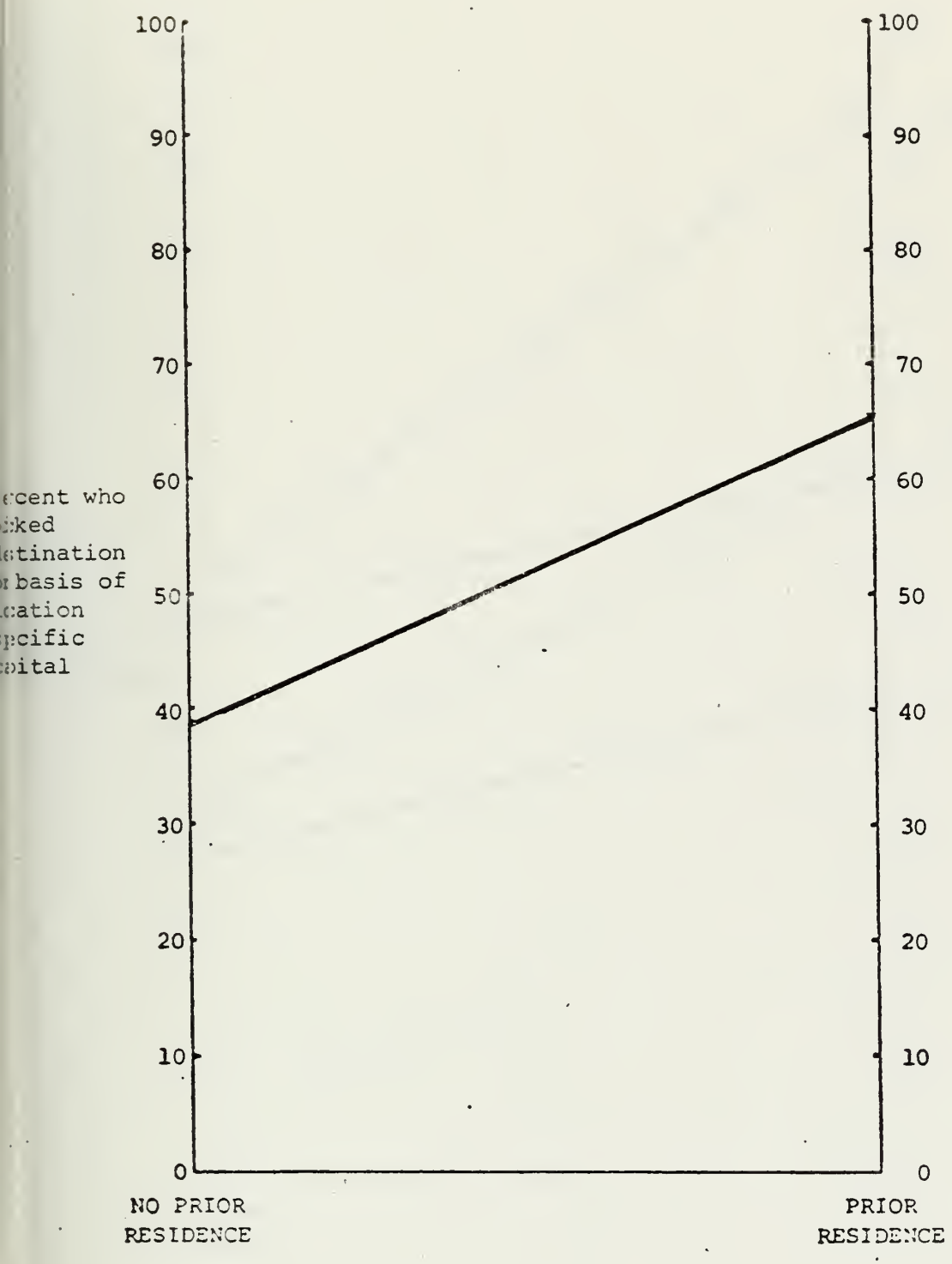

Figure 2. Returns to Location Specific Capital by Reason for Leaving Origin (non-simultaneous decision makers)

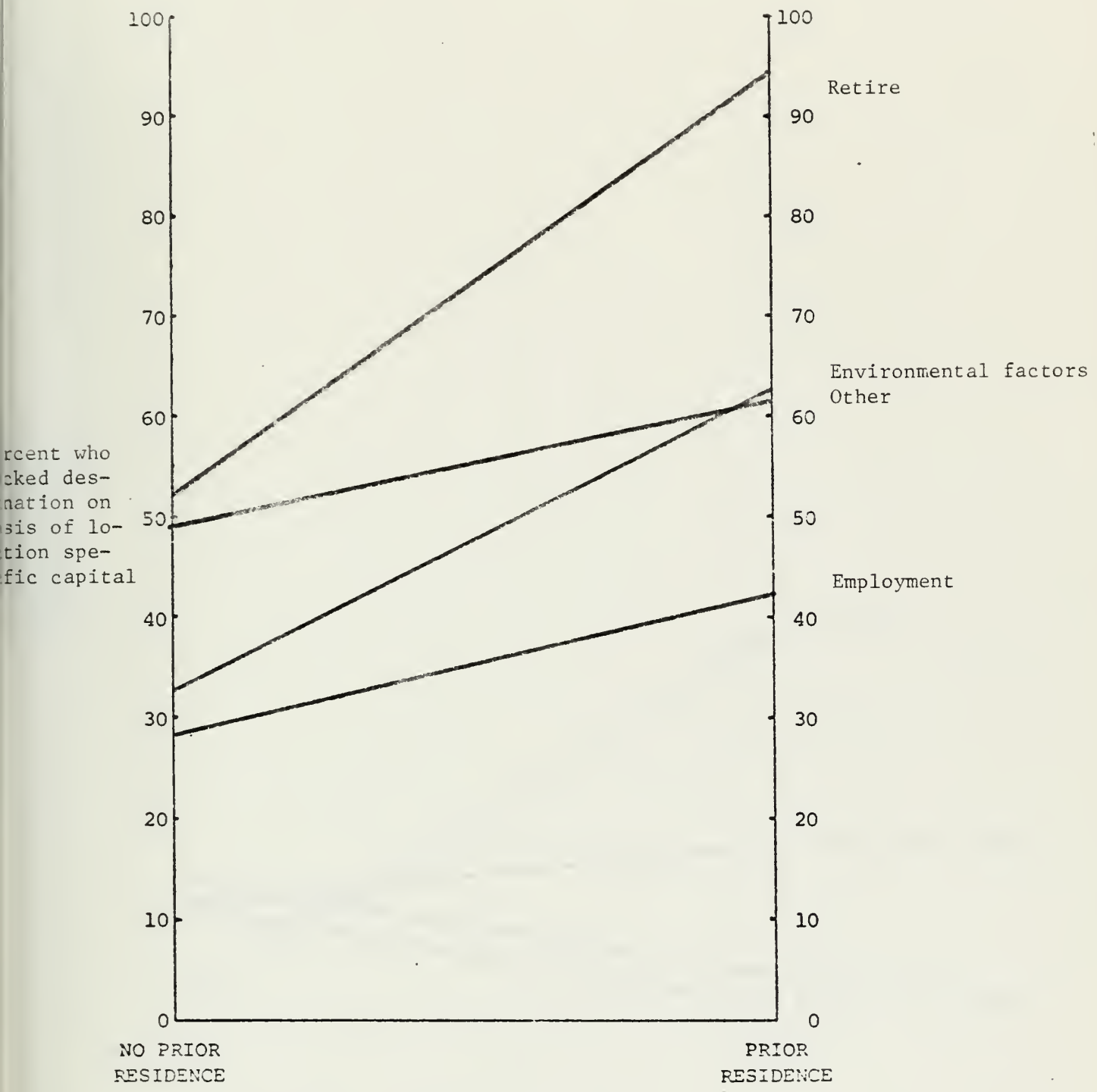

Figure 3. Salience of Prior Residence to Utilization of Location S... Capital in Various Forms (Non-simultaneous decision make...)

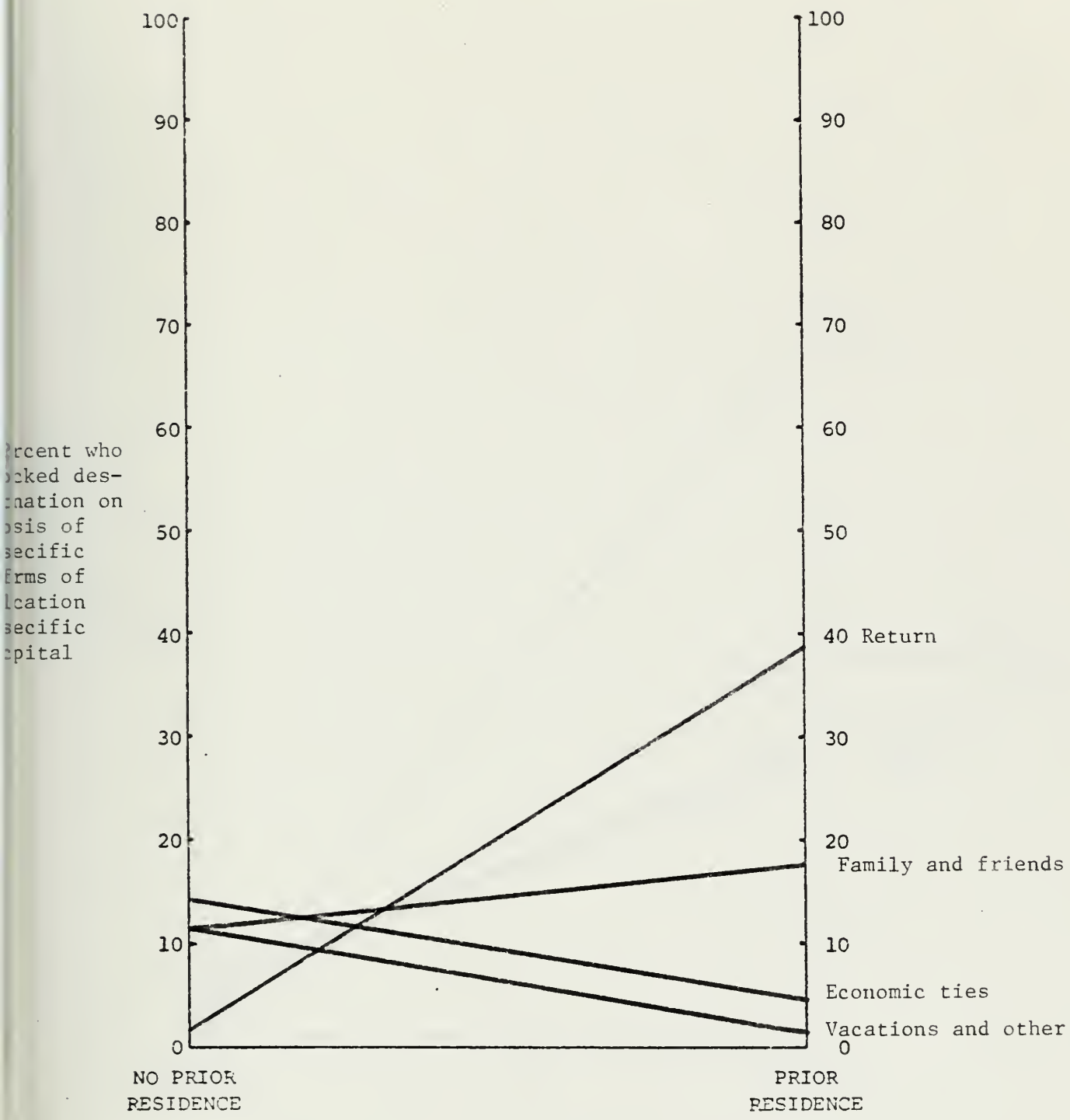

Figure 4. Salience of "Return" as a Form of Location Specific Capit
in Relation to Prior Residence by Reason for Leaving
(Non-simultaneous decision makers).